UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
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ART UNIT	PAPER NUMBER
2168	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/601,445	DESAI ET AL.
	Examiner	Art Unit	
	Dangelino N. Gortayo	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 May 2007</u>.

2a)☒ This action is **FINAL**.　　　2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>*1-8 and 10-15*</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>*1-8 and 10-15*</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>23 June 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____ .

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____ .

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-8 and 10-15 are pending in this application.

Response to Amendment

2.   In the amendment filed on 5/9/2007, claim 1 has been amended. The currently

pending claims considered below are Claims 1-8 and 10-15.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-8 and 10-15 are rejected under 35 U.S.C. 103(a) as being anticipated

by <u>Silberberg</u> et al. (US Patent 6,957,214 B2) in view of <u>Manikutty</u> et al. (Us Patent

7,120,645 B2)

As per claim 1, <u>Silberberg</u> teaches "In a system for construction of executable

queries," (see Abstract) "a method of communicating with an application" (column 5

lines 47-62)

the system receiving from the application, one or more calls to set one or more

compile parameters and commands for converting one or more input queries to an XML

intermediate language representation, (Figure 13, column 6 lines 55-65, column 7 lines

19-29 and lines 53-67, and column 14 lines 11-20, wherein user domain models are

provided describing mapping between terminology and models, used when query

translation is executed) wherein the XML intermediate language representation is a

composite of the plurality of input queries,(Figure 6 and column 8 line 58 – column 9 line

6, wherein a generic domain model is composed of terminology used in a group of

domain queries), and has a graph structure;" (Figure 11, 13, column 11 lines 1-6,

column 14 lines 19-38, wherein the model has a graph structure represented by a

canonical modeling language)

and the system receiving from the application, one or more calls to convert the

XML intermediate language representation to at least one executable query, the at least

one executable query enabling the system to query over a plurality of data sources

having differing data models (column 9 lines 12-38, column 10 lines 15-33, and column

13 lines 14-20, wherein the system translates the model to high-level queries of each

different data source).

Silberberg does not teach the XML intermediate language representation is an

explicit representation of the meaning of the plurality of input queries. Manikutty teaches

the XML intermediate language representation is an explicit representation of the

meaning of the plurality of input queries (Figure 5, column 5 lines 12-25, lines 36-51,

column 14 lines 45-54 column 20 line 63 – column 21 line 44, column 22 lines 47-67,

wherein queries are translated to a normalized tree of canonical functions, wherein the

nodes of a tree represent operations, and the tree describing the query). It would have

been obvious at the time of the invention for one of ordinary skill in the art to combine

Silberberg's method of query translation into models that apply to heterogeneous data

sources with Manikutty's method of an intermediate language model/representation

being an explicit representation of a group of input queries during the process of query

translation. This gives the user the ability for a query to be broken down into a group of

primitive queries for use in an intermediate model when querying heterogeneous data

sources, making the query more complex and providing better information in the task.

The motivation for doing so would be to provide the user with queried information in a

timely and efficient manner (Silberberg, column 1 lines 24-34).

As per claim 2, Silberberg teaches "the application receiving from the system

one or more of the group consisting of event status, progress status, intermediate

results, final results, error messages, warnings and help messages" (column 6 lines 12-

33 and column 8 lines 46-50)

As per claim 3, Silberberg teaches "the one or more calls to set one or more

environment, compile parameters and compile commands comprise one or more of

enabling message reception from the system, specifying query permission and

execution restrictions, selecting the input query and compiler type, and establishing

evaluation contexts." (Figure 8 and column 6 lines 42-54)

As per claim 4, Silberberg and Manikutty are taught in claim 3 above.

Additionally, Manikutty teaches "the compiler type comprises XPath, XSLT and XQuery

language compilers" (column 5 line 63 – column 6 line 9, column 6 lines 23-36).

As per claim 5, Silberberg teaches "the XML intermediate language

representation is a semantic representation of an input query" (column 7 lines 19-29)

As per claim 6, <u>Silberberg</u> teaches "converting the XML intermediate language to the executable query comprises preparing the XML intermediate language for direct execution in a target query execution engine, wherein the direct execution avoids the use of a compiler for the target execution engine" (column 9 lines 49-67)

As per claim 7, <u>Silberberg</u> teaches "converting the XML intermediate language to the executable query comprises converting the XML intermediate language into a target representation using a target generator" (column 14 lines 27-40 and column 15 lines 21-29)

As per claim 8, <u>Silberberg</u> teaches "the target representation is one or more of the group consisting of an XML language target, a SQL language target and an intermediate language target." (column 6 lines 34-41 and column 10 lines 43-50)

As per claim 10, <u>Silberberg</u> teaches "A system for compilation and execution of input queries producing query results," (see Abstract)

"comprising: a plurality of input devices for receiving a plurality of input queries;" (Figure 1 "ADINA", Figure 15, and column 6 lines 12-19, wherein a data system accepts queries)

one or more intermediate language compilers wherein a composite XML intermediate language representation is compiled from the plurality of input queries (Figure 6 and column 8 line 58 – column 9 line 6, wherein a generic domain model is composed of terminology used in a group of domain queries), wherein the XML intermediate language has a graph structure;" (Figure 11, 13, column 11 lines 1-6,

column 14 lines 19-38, wherein the model has a graph structure represented by a canonical modeling language)

"a plurality of target generators wherein the XML intermediate language representation is transformed into a plurality of target queries;" (column 9 lines 12-38, column 10 lines 15-33, and column 13 lines 14-20, wherein the system translates the model to high-level queries of each different data source).

"a plurality of data sources for querying over;" (column 6 lines 34-41, wherein a plurality of data sources can be queried)

"and a plurality of execution engines wherein the plurality of target queries are executed over the plurality of data sources to produce the query results." (column 9 lines 49-67, wherein Domain User Agents execute the queries provided by the translation)

Silberberg does not teach the XML intermediate language representation is an explicit representation of the meaning of the plurality of input queries. Manikutty teaches the XML intermediate language representation is an explicit representation of the meaning of the plurality of input queries (Figure 5, column 5 lines 12-25, lines 36-51, column 14 lines 45-54, column 20 line 63 – column 21 line 44, column 22 lines 47-67, wherein queries are translated to a normalized tree of canonical functions, wherein the nodes of a tree represent operations, and the tree describing the query). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Silberberg's method of query translation into models that apply to heterogeneous data sources with Manikutty's method of an intermediate language model/representation

being an explicit representation of a group of input queries during the process of query translation. This gives the user the ability for a query to be broken down into a group of primitive queries for use in an intermediate model when querying heterogeneous data sources, making the query more complex and providing better information in the task. The motivation for doing so would be to provide the user with queried information in a timely and efficient manner (Silberberg, column 1 lines 24-34).

As per claim 11, Silberberg and Manikutty are taught in claim 3 above. Additionally, Manikutty teaches "the plurality of input queries comprises a queries formed from one or more of XPath, XSLT, and XQuery languages" (column 5 line 63 – column 6 line 9, column 6 lines 23-36).

As per claim 12, Silberberg teaches "the XML intermediate language representation expresses the meaning of the input query" (column 7 lines 19-29)

As per claim 13, Silberberg teaches "the plurality of target generators comprise one or more of an XML language generator, a SQL language generator and an intermediate language generator." (column 6 lines 34-41 and column 10 lines 43-50)

As per claim 14, Silberberg teaches "the plurality of data sources comprise one or more of relational data sources and non-relational data sources" (column 6 lines 34-41)

As per claim 15, Silberberg teaches "non-relational data sources comprise spreadsheets and word processing documents" (column 6 lines 34-41 and column 7 lines 52-59)

Response to Arguments

5.   Applicant's amendments, see page 2, filed 5/9/2007, with respect to the rejection of claim 1 under 35 USC 112, second paragraph have been fully considered and are persuasive. The rejection of claim 1 in regards to 35 USC 112, second paragraph has been withdrawn.

6.   Applicant's arguments, see page 5, filed 5/9/2007, with respect to the rejection of claims 1-2, 5-7, 10-12, and 14-15 under 35 USC 101 have been fully considered and are persuasive. The rejection of claims 1-2, 5-7, 10-12, and 14-15 in regards to 35 USC 101 has been withdrawn.

7.   Applicant's arguments, see page 8, filed 1/22/2007, with respect to the rejection of claims 1-8 and 10-15 under 35 USC 103(a) have been fully considered but they are not persuasive. Details are stated below.

        a.   Examiner is entitled to give claim limitations their broadest reasonable interpretation in light of the specification. See MPEP 2111 [R-I]

        Interpretation of Claims-Broadest Reasonable Interpretation

        During patent examination, the pending claims must be 'given the broadest reasonable interpretation consistent with the specification.' Applicant always has the opportunity to amend the claims during prosecution and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-51 (CCPA 1969).

b.   Applicant's argument is stated as Silberberg and Manikutty in combination

fails to teach an intermediate language representation is an explicit

representation of the meaning of an input query.

In regards to the argument, Examiner respectfully disagrees. As disclosed

in the previous office action, Manikutty is used as a secondary reference to

provide Silberberg with the ability to process intermediate language

representation of XML input queries as explicit representation of input queries.

Manikutty teaches in Figure 5, column 20 line 63 – column 21 line 44, column 22

lines 47-67 that XML input queries are analyzed and translated into primitive

operations that represent the meaning behind input queries. In a general sense,

Manikutty translates XML operations into primitive operations containing the

meaning behind the original XML input queries, the meaning being interpreted as

the operation it is meant to accomplish (column 5 lines 12-25, lines 36-51).

Column 14 lines 45-54 teaches that XML input queries can be replaced with a

smaller set of primitive operations that represent the original input queries. While

Manikutty teaches that the representation is in a tree structure, Silberberg, the

primary reference, is depended on to teach the representation has a graph

structure, as outlined in the rejection and in the response to arguments below.

Therefore, Silberberg in combination with Manikutty teaches the intermediate

language representation is an explicit representation of the meaning of the

plurality of input queries.

c.   Applicant's argument is stated as Silberberg and Manikutty in combination

fails to teach an intermediate language representation has a graph structure.

In regards to the argument, Examiner respectfully disagrees. As disclosed

in the previous office action, Figure 11, 13, column 11 lines 1-6, column 14 lines

19-38 of Silberberg teaches that the model of a intermediate representation of

input queries has a graph structure represented by a canonical modeling

language. Additionally, Figures 2 and 4 of Silberberg show a data structure

consisting of a set of nodes and a set of edges to establish the relationship

between nodes, which is the understood meaning of a graph structure. As

opposed to the argument set forth, Manikutty is not used to teach a graph

structure. Silberberg teaches that the representation of input queries after

translation into a generic model has a graph structure. The claims as written is

interpreted to have the intermediate representation being an explicit

representation of the input queries, as set forth in the response to arguments

above, and that the intermediate representation has a graph structure, as

disclosed by Silberberg. Therefore, Silberberg and Manikutty in combination

teaches an intermediate language representation has a graph structure.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dangelino N. Gortayo whose telephone number is

(571)272-7204. The examiner can normally be reached on M-F 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tim T. Vo can be reached on (571)272-3642. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dangelino N. Gortayo   Tim T. Vo
Examiner   SPE

TIM VO
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